

### Abstract

A portable EEG (electroencephalograph) instrument, especially for use in emergencies and brain assessments in physicians' offices, detects and amplifies brain waves and converts them into digital data for analysis by comparison with data from normal groups. In one embodiment, the EEG electrodes are in a headband which broadcasts the data, by radio or cellular phone, to a local receiver for re-transmission and/or analysis. In another embodiment, the subject is stimulated in two modes, i.e., aural and sensory, at two different frequencies to provide the subject's EPs (Evoked Potentials), assessing transmission through the brainstem and thalamus.